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AUTHOR Gersten, Elayne
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ABSTRACT

This study is designed to identify differences in linguistic and communicative performances among preschool-aged autistic children and to learn more about the syndrome of autism by examining patterns of language development, the course of its acquisition, and the context in which it is acquired. Studying the differentiation of skills considered necessary for the mastery of communicative ability leads to implications for clinical practice that facilitate each child's responsivity to her/his environment. The current level of functioning of eighteen children, all showing almost continuous psychotic interruption and impaired communication, was assessed. An inventory of tasks, the Pre-Schooler's Workshop Rating Scale, was administered to each child to provide a functional analysis of the developmental levels of language acquisition and to differentiate among the various patterns of the disorder. From this assessment and classroom observation, a list of priorities was established and an intervention program was planned. Reevaluations were made at four month intervals over a two year period. The data suggest that there is a spectrum of varying degrees of developmental disturbance in autism. Early intervention using the proposed therapy model, rating scale, and classification system fosters and enhances language skills. (JK)

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"The Acquisition of Language in Preschool Autistic Children"

BOSTON UNIVERSITY SCHOOL OF EDUCATION
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Elayne Gersten
Acting Director of Grants and Special Projects
Suffolk Child Development Center
Hollywood Drive
Smithtown, New York 11787

FL 012 583

THE ACQUISITION OF LANGUAGE IN PRESCHOOL AUTISTIC CHILDREN

It is well documented by Hermelin & O'Connor, 1970, Manyuk, 1974, and Bloch, Gersten & Kornblum, 1980 that not only do autistic children use little speech and demonstrate substantial language delay, but if language is acquired, norms cannot be applied because their language remains deviant at all stages of development. There is also evidence, as reported by Goldfarb, Braunstein & Scholl, 1972 that pronounced communication flaws serve to increase the autistic child's isolation from human relationships and to slow down the effectiveness of any interventions. While numerous investigations dealing with language characteristics in autism have been published in the last ten years, few attempts have actually been made to study the process of language acquisition itself and/or the differences among children with this diagnosis. With the exception of the work of Shapiro, Fish & Ginsberg, 1972, Chess & Thomas, 1973, Rutter & Martin, 1972, Rutter & Schoepler, 1979 and Fay, 1980, language development in this population has been studied and reported on as if autistic children were a homogenous group. Since studies comparing autistic children with normals and with other groups of subnormals have already defined language deviations for the purpose of differential diagnosis, it would seem that research must now lead to a more thoughtful assessment of specific language functioning in individual autistic children.

This study, is designed to identify differences in linguistic and communicative performances among preschool-aged autistic children and to learn more about the syndrome of autism itself by examining (1) patterns of language development; (2) the course of its acquisition; and (3) the context in which it is acquired. It was hypothesized that studying the differentiation of skills which are deemed necessary for the mastery of communicative ability would lead to implications for clinical practice that would facilitate each autistic child's responsivity to his/her environment.

SUBJECTS

The children in this study were selected from Pre-Schooler's Workshop, a therapeutic nursery/kindergarten in Syosset, N.Y., on the basis of a diagnosis of infantile autism. Diagnoses were independently arrived at by workups in other facilities prior to admission, and corroborated by the treatment center's clinical staff. Detailed birth, family, and developmental histories were obtained, and each child had a medical examination which revealed no findings to interfere with diagnosis. Neurological examination uncovered no gross abnormalities, and audiometric testing indicated that hearing was within normal limits. Psychometric evaluations were attempted, but in no subject was an IQ obtained. This was due to an array of behaviors that interfered with performance. While all were deemed functionally retarded, the retardation was considered secondary to the diagnosis of autism. The subjects, as shown in Table 1, included three girls and fifteen boys with a mean age of 3.75 years, who were followed-up for the two years they were in attendance. They were all living at home in two-parent families, and represented a range of race, religious, and socio-economic backgrounds as found in a suburban New York community.

At the time of admission, all of the children were out of contact with their environment. This was demonstrated by an inability to initiate and sustain eye contact, or to find even minimal pleasure with a particular person or activity. Ten of the children had vocalizations limited to grunts, whines, sobs, and an occasional undifferentiated vowel sound. The remaining eight verbalized at various levels, ranging from random consonant sounds to a labeling vocabulary of several hundred words. All of the children, regardless of their level of speech development, showed almost continuous psychotic interruption and impaired communication.

PERFORMANCE CRITERIA

An individulaized, prescriptive program was designed for each child. It was based upon an assessment of his/her current level of functioning and the behaviors that interfered with his/her learning. The psychodynamic-interpersonal theory of identifying the source and meaning of the child's maladaptive behavior was the strategy underlying all plans for habilitation. The major objective was to communicate a sense of acceptance without censure in a nondemanding climate and to help foster a relationship. Second to this interaction of the child's internal processes, were the educational goals established.

An inventory of tasks, known as the Pre-Schooler's Workshop Rating Scale, was administered to determine each child's level of functioning. The PWRS was designed as an inventory and as a qualitative method for recording clinical observations. Its purpose was to provide a functional analysis of the developmental levels of language acquisition and to differentiate among the various patterns of the disorder. The PWRS was constructed with the pathology of autism in mind. It utilized tasks for which children with this diagnosis have been observed to demonstrate interest. The activities and materials were varied and simple, and responses were easy to interpret. This scale was not comprehensive in any one area of development, nor was there any data on validity or reliability. It was, rather, an assessment of whether or not a youngster has been observed to do a specific task which demonstrates a particular perceptual linguistic or communicative skill. It was from this assessment and a three week observation period in the classroom that a list of priorities was established, and a step-by-step approach for a program of intervention was planned.

PERFORMANCE CRITERIA (cont.)

The treatment program for each child was carried out in three different settings: (1) in thirty-minute individual language development sessions with the speech pathologist, from two-four times per week; (2) in the classroom as one of a group of six children with three adults; (3) at home with the family. This comprehensive plan was designed to fill up the youngster's life space. The eighteen children under study were involved in program five days a week for elever months of the year. While they all remained in the program until at least age six, this study reports on the data collected only during their initial two years.

SCORING CLASSIFICATION

Fish, Shapiro, Campbell & Wile (1968), by analyzing differences in language patterns among preschool-age psychotic children, divided their subjects into five distinct groups. Each of these groups was hypothesized to represent varying degrees of decreasing developmental impairment and prognostic severity. This present study, while using the same major headings and hierarchy for differentiation of skills, further subdivides language performance on a ten-point continuum or grid.

By analyzing each child's performance on the PSWR and classroom observations during the initial evaluation period, each child was assessed a certain point on the grid which represented the degree of severity of language impairment as shown in Table 2. Of the eighteen children under study, eight (cases A-H) were placed at the three positions indicating greatest impairment on the continuum. Their language was characterized by a lack of auditory comprehension and no expressive speech. They varied from one

another only in degree of exhibited activity, contact with the environment and minimal adaptive skills; (cases J,K,L) were similarly deficient in speech and adaptive behavior, but did comprehend most simple directions and discriminate among named objects; five (cases M-Q) demonstrated less impairment, as evidenced by their understanding of the function of named objects and in response to two-level commands. They also were actively developing a speaking vocabulary of echoic and spontaneous words; two (cases R,S) were least impaired and markedly different because of the presence of speech. They spoke more often and exhibited a larger vocabulary, increased length of utterance, more refined use of syntax and morphological markers. Nonetheless, even their performance showed marked deviations from that seen in normals at any age. At the onset of treatment program, no subject's degree of impairment reached beyond level No. 4.

RESULTS

Each subject was subsequently reevaluated at four month intervals during the course of the next two years in program. As can be seen in Table 3, the results of the six evaluations were recorded, and the pattern of each subject's language acquisition was charted on the continuum. Because of the limited number of subjects at each starting point (designated as Evaluation 1), there are no inferential statistics to handle comparisons from individual to individual. Furthermore, since distances along the continuum are not measured or equal, each level indicates progress in simply an ordinal manner. Rather than statistical relevance, this data has clinical validity and varity of rate and degree of progress. Defined operationally, results include:

1. All subjects, regardless of severity of impairment at the onset of treatment, demonstrated <u>considerable</u> gains in language development.

2. At any given time of evaluation, the level of language behavior was always equal to or better than that recorded at a previous evaluation. There was no observable regression.
3. An examination of Table 3 indicates that no two subjects, regardless of similarity of impairment at onset of treatment, followed an identical course.

   For example:

   a. a comparison of subjects whose first rating was the same revealed variation in the level attained at the final evaluation. Of the four who started at No. 10 (cases A-D), two ended at No. 8 and two at No. 6; of the three starting at No. 9, (cases E-G), one ended at No. 7 and two at No. 5; of the three starting at No. 6 (cases J-L), one ended at No. 4, one at No. 3 and still another at No. 1; of the five starting at No. 5, (cases M-Q), one ended at No. 4, two at No. 3 and two at No. 1; only the two least impaired beginning at No. 4 (cases R,S), both ended at No. 1.

   b. Furthermore, a comparison of subjects whose first rating was the same revealed variation in the rate of progress during successive evaluations. All four initially classified as most impaired (cases A-D), showed no gains until Evaluation III. However, each of the four differed from one another in all subsequent evaluations. Some held at the same level for as many as four evaluations (cases A,G), and others progressed more evenly (cases D,F). Some progressed from one level to the next (cases J,K,M,N,O,P,Q,R), others skipped one level (cases A,C,D,E,F,H,L,S), while still others skipped two levels (cases B,G). Some showed progress initially and held (cases B,G,K,P,R), while others were slow to show progress and then progressed in spurts (cases D,F,L,N,S).

RESULTS (cont.)

4. As noted, a definite relationship was noted between each subject's initial level of performance and his/her final level at the end of two years in program. Table 3 demonstrates that of the four who were most impaired and started at No. 10 (cases A-D), none achieved better than No. 6; of the four entering at No. 9 or No. 8 (cases E-H), none achieved better than No. 5; of the three entering at No. 6, (cases J-L), one achieved to No. 1, and of the least impaired entering at No. 4 (cases R,S), both achieved to No. 1. Thus, the relative degree of impairement at onset of treatment maintained itself for all subjects.

5. While no two subjects in this study followed the identical course of language acquisition, examination of Table 3 does reveal enough similarities and differences to suggest the possibility of subgroups. For example:

   a. A gross sub-division might include cases A-H as a "most impaired" or "non-verbal" group and cases J-S as a "least impaired" or "verbal" group. (2)

   b. A further sub-division based primarily on severity of impairment at onset might be cases A-D, E-H, J-L, M-S. (4)

   c. A still finer sub-division based upon both severity of impairment at onset and level attained at final evaluation might be A,C; B,C,E: F,G,H; J,K,L; M, N,P; O,Q,R,S. (6)

DISCUSSIONS AND CONCLUSIONS

This investigation focused on the differentiation of language skills and the ways in which they are acquired in preschool autistic children. It traced the course of development for eighteen subjects in a treatment program for two years and lends support to the following conclusions:

1. Autistic children acquire language skills in the same presumed sequential order as do normals. However, regardless of degree of impairment, psychotic interruptions prevail to set them apart from normals at any age.
2. While there were similarities among subjects, there was no evidence to indicate a specific level of acquisition that autistic children have in common. It suggested, rather, that the differences among them were so great as to possibly obscure the similarities.
3. There was no evidence of correlation between the severity of language deficit and responsiveness to language therapy. All subjects, however, regardless of degree of impairment, made some gains during the treatment program.
4. No evidence emerged to indicate that there may be developmental indices that can be used to prognosticate better outcome.
5. Possible nonlinguistic behaviors that may be correlated to the success of outcome are (a) the child's ability to read without being taught; (b) absence of atypical mannerisms and/or defects; (c) or degree of hyer - or hypo-activity.
6. Possible linguistic behaviors that may be correlated to the successs of outcome are (a) the amount of immediate echolalia; (b) proportion of repetitions of contextual inappropriateness; (c) grammatical usage; (d) comprehension of language.

DISCUSSIONS AND CONCLUSIONS (cont.)

7. Autistic children acquire language skills in different degrees and at different rates from one another. A comparison of subjects whose first rating was the same revealed variations in rate of progress during successive evaluations, as well as variations in the level attained at the final evaluation.
8. The different profiles of disordered development suggest the possibility of from two to six sub-groups. Each group differs in degree of impairment at the onset of treatment, and/or rate of progress, and/or degree of impairment at the end of treatment.
9. A definite relationship was noted between the level of performance at onset of treatment and the level at the end of two years. That is, those with the greatest impairment remained among those most impaired, and those initially seen as less impaired maintained themselves. This might suggest that for some children the degree of impairment was a greater determinant in overall prognosis than the treatment plan itself.
10. The gains subjects in this study made, as compared with those in literature, suggest that early intervention using this therapy model, rating scale, and classification system does indeed foster and enhance language skills.

In summary, the data suggest that there is a spectrum of varying degrees of developmental disturbance and disorder in autism. Since the literature concerned with language acquisition in autism is so sparce and often limited to single-subject studies, each with methods of evaluation and subject selection that very from one study to the next, it would seem imperative to being replication studies using scales of performance and systems of classification. We must begin to define sub-groups in terms of their different developmental/deviational patterns if we

are to adequately assess, prognosticate, and develop clinical practice models which will serve to maximize each autistic child's potential.

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